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Report of the technical review of the first biennial report of Japan

Developed country Parties are requested, in accordance with decision 2/CP.17, to submit their first biennial report to the secretariat by 1 January 2014. This report presents the results of the technical review of the first biennial report of Japan conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention".

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Contents

		Paragraphs	Page
I	Introduction and summary	1–10	3
	A Introduction	1–5	3
	B Summary	6–10	3
II	Technical review of the reported information	11–65	4
	A All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target	11–13	4
	B Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	14–21	5
	C Progress made towards the achievement of the quantified economy-wide emission reduction target	22–45	7
	D Provision of financial, technological and capacity-building support to developing country Parties	46–65	13
III	Conclusions	66–75	17
Annex			
	Documents and information used during the review		20

I. Introduction and summary

A. Introduction

1. For Japan, the Convention entered into force on 21 March 1994. Under the Convention, Japan made a commitment to reduce its greenhouse gas (GHG) emissions by 3.8 per cent per cent by 2020 below the 2005 level.

2. This report covers the in-country technical review of the first biennial report (BR1) of Japan, coordinated by the secretariat, in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" (decision 23/CP.19).

3. The review took place from 6 to 11 October 2014 in Tokyo, Japan, and was conducted by the following team of nominated experts from the UNFCCC roster of experts: Mr. Jameel Alsalam (United States of America), Ms. Diann Black-Layne (Antigua and Barbuda), Ms. Laura Elena Dawidowski (Argentina), Mr. Klaus Radunsky (Austria) and Mr. Robert George Sturgiss (Australia). Ms. Dawidowski and Mr. Radunsky were the lead reviewers. The review was coordinated by Ms. Sylvie Marchand and Mr. Nalin Srivastava (secretariat).

4. During the review, the expert review team (ERT) reviewed each section of the BR1, including the common tabular format (CTF) tables.

5. In accordance with decision 23/CP.19, a draft version of this report was communicated to the Government of Japan, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

B. Summary

6. The ERT conducted a technical review of the information reported in the BR1 of Japan according to the "UNFCCC biennial reporting guidelines for developed country Parties" (hereinafter referred to as the UNFCCC reporting guidelines on BRs).

7. During the review, Japan provided further relevant information, including details on its quantified economy-wide emission reduction target (Japan's new emission reduction target, impacts of the great east Japan earthquake and tsunami (GEJE) and the energy situation in Japan); GHG emissions (trends in GHG emissions and factor analysis); policies and measures (PaMs) (overall policy context, policy framework, cross-cutting PaMs and sectoral PaMs; information with respect to the effect of some PaMs on GHG emissions and a summary of the fourth strategic energy plan); and the methodology of GHG emission projections.

1. Completeness and transparency of reporting

8. Gaps and issues related to the reported information identified by the ERT are presented in table 1 below.

[1] The biennial report submission comprises the text of the report and the common tabular format (CTF) tables. Both the text and the CTF tables have been subject to the technical review.

2. Timeliness

9. The BR1 was submitted on 27 December 2013, before the deadline of 1 January 2014 mandated by decision 2/CP.17. Revised versions were submitted on 21 August and 22 September 2014. The CTF tables were also submitted on 27 December 2013 followed by a revised version submitted on 18 September 2014.

3. Adherence to the reporting guidelines

10. The information reported by Japan in its BR1 is mostly in adherence to the UNFCCC reporting guidelines on BRs as per decision 2/CP.17 (see table 1).

Table 1

Summary of completeness and transparency issues of reported information in the first biennial report of Japan

Sector/gas/other issues/areas	*Completeness*	*Transparency*	*Reference to paragraphs*
GHG emissions and trends	Complete	Transparent	
Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target	Complete	Transparent	
Progress in achievement of targets	Complete	Transparent	
Projections	Partially complete	Transparent	39
Provision of support to developing country Parties	Complete	Mostly transparent	47, 57

A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in the chapter on conclusions.

II. Technical review of the reported information

A. All greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

11. Japan has provided a summary of information on GHG emission trends for the period 1990–2011 in its BR1 and CTF table 1. This information is consistent with the 2013 national GHG inventory submission.

12. Total GHG emissions[1] excluding emissions and removals from land use, land-use change and forestry (LULUCF) increased by 8.8 per cent between 1990 and 2012, whereas total GHG emissions including net emissions or removals from LULUCF increased by 8.6 per cent over the same period. Emission increases were driven by the substitution of nuclear energy by fossil fuel energy production linked to the impact of GJE in 2011 and economic growth. These factors outweighed improvements in the efficiency of use (e.g. in the transport sector), as well as emission reductions in the industrial processes, agriculture and waste sectors. Further information on the review of emission and emission trends is provided in chapter II.A of the report of the technical review of the sixth national communication (FCCC/ARR/2014/JPN).

[1] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of carbon dioxide equivalent excluding land use, land-use change and forestry unless otherwise specified.

13. During the review, Japan provided additional analysis of past trends based on Kaya factor analysis for each sector, on a year-by-year basis. This type of detailed analysis exceeds the usual presentation of GHG emission trends, and the TRT commends Japan for the detailed analysis and presentation.

B. Assumptions, conditions and methodologies related to the attainment of the quantified economy-wide emission reduction target

14. In its BR1 and CTF tables 2, Japan reported all the elements of the description of its quantified economy-wide emission reduction target, referred to henceforth as the target, including associated conditions and assumptions.

15. Japan announced in November 2013 a new emission reduction target to reduce emissions to 3.8 per cent below the 2005 level. This is considered an interim target, and a firm target will eventually be set based on further review of Japan's energy policy and energy mix followed by finalization of the plan for global warming prevention. The details of the target are as follows:

(a) The emission target is a decrease of 3.8 per cent below the 2005 base year emission level by 2020. The 2005 base year level of emissions is 1,351,406.69 kt carbon dioxide equivalent (CO_2 eq) (excluding LULUCF). Japan's target is equivalent to an increase in GHG emissions without LULUCF of 5.3 per cent above the 1990 level by 2020;

(b) The included gases are CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) using global warming potential (GWP) values from the Second Assessment Report (AR2) of the Intergovernmental Panel on Climate Change (IPCC) and nitrogen trifluoride (NF_3) using GWP values from the Fourth Assessment Report (AR4) of the IPCC to aggregate GHG emissions up to 2020;

(c) All six sectors are included (energy, transport, industrial processes, agriculture, LULUCF and waste sectors);

(d) Activity-based accounting is used for LULUCF. During the review, Japan clarified that forest management is calculated against a reference level of zero. Japan also reported that in 2020, it expects that the level of removals from forest management will be about 2.8 per cent or more of the base year (2005) emissions (approximately 38,000 kt CO_2 eq).

16. During the review, Japan presented additional information comparing the current target to previous targets and emission levels, including for 1990 and 2005, the target under the first commitment period of the Kyoto Protocol, and the midterm target developed in 2009 (although the original target pledged at the United Nations Climate Change Conference in Copenhagen, Denmark, was not compared). This comparison was presented by adjusting the electricity-related emission factor to remove the contribution of nuclear power, and thus show the relative stringency of the targets with nuclear power removed. The chart presented by Japan shows that after adjusting the targets to remove nuclear energy, the current target will result in lower emissions than the adjusted version of the previous midterm target developed in 2009.

[a] The Kaya factor analysis is a simplified approach to estimate the contribution of human activities (factors) to total GHG emission levels, which it expresses as the product of four inputs: population, gross domestic product (GDP) per capita, energy use per unit of GDP and carbon dioxide emissions per unit of energy consumed.

17. During the review, Japan provided additional information regarding the assumptions and key variables underlying the current target and the previous target developed in 2009. The information is summarized in the box below.

Box
Comparison of key variable assumptions, and current and previous targets of Japan

	Value expected in 2020	
Key variable	*NC6/BR1 projections*	*Midterm target developed in 2009*
Target (%)	-3.8 from 2005	-15 from 2005
Population (thousands)	124 100	122 810
Private households (thousands)	53 053	53 570
Actual GDP (trillion JPY) (new target in fixed 2005 JPY, previous target in fixed 2000 JPY)	611	656
Actual GDP (fixed 2005 trillion JPY)	611	612
Total emissions without LULUCF (kt CO_2 eq)	1 364 000	1 157 000
LULUCF (kt CO_2 eq)	-38 000	
Nuclear share of electricity production (%)	Almost 0[a]	42
Final energy consumption (million kilolitres crude oil equivalent)	371	375
Energy intensity of GDP (million kilolitres/trillion JPY)	0.61	0.57
Energy intensity of GDP (million kilolitres/trillion 2005 JPY)	0.61	0.61
Other additional reductions (kt CO_2 eq) (renewable energy sources, F-gas, international credits)	-26 000	

Source: Information provided by Japan during the review and expert review team calculations.
Abbreviations: F-gas = fluorinated gas, GDP = gross domestic product, JPY = yen, LULUCF = land use, land-use change and forestry, NC6/BR1 = sixth national communication/first biennial report.
[a] Values in both columns should not be compared because of the difference of reference years for GDP. The expert review team has converted from 2000 JPY to 2005 JPY for comparability.
[b] Value for 2012 was used.

18. A comparison of key variables between the current target and the previous midterm target developed in 2009 shows that:

(a) Current population projections are somewhat higher than they were previously (although household projections are lower);

(b) Current gross domestic product (GDP) projections are slightly lower than they were previously (after adjusting for the difference in reference years);

(c) Projected energy use and energy intensity of GDP are nearly identical between the current target and the previous target;

(d) The previous target had assumed that a large share of electricity would come from nuclear power;

(e) The current target includes additional reductions not included in the previous target: reductions from LULUCF (which had not yet been determined for the previous

target) and other reductions, such as from policies not included in projections and market-based mechanisms.

19. The current Japanese target should be understood in the context of the upheaval in Japanese society, politics and energy policy due to GEJE. The damage from this event included 15,889 people dead, 2,601 people missing, over 1 million buildings damaged or destroyed and economic damage of 17 trillion yen (approximately USD 210 billion using the Organisation for Economic Co-operation and Development exchange rates for 2011).

20. In the wake of this event, energy and emissions policy development in Japan is ongoing. As at September 2014, all of the nuclear reactors were shut down pending safety reviews by the Government, which have not yet been completed. The operators of 20 nuclear plants had applied to the Nuclear Regulatory Authority for approval to recommence operations. The outcomes of these applications remain unclear. The time required for the consideration of these applications, and the need for consultations with all stakeholders, has generated considerable uncertainty about the extent of future generation levels from the nuclear power industry. Therefore, the future energy mix of the country has not been set and the energy mix must be set prior to establishing a firm 2020 emission target.

21. The understanding of the ERT is that when Japan decides on its energy mix, it would likely also update to a firm 2020 emission target reflecting that energy mix.

C. Progress made towards the achievement of the quantified economy-wide emission reduction target

22. In its BR1 and CTF tables 3 and 4, Japan reported information on its mitigation actions implemented and planned since its fifth national communication (NC5) to achieve its target. Japan also reported on the use of units from market-based mechanisms and LULUCF to achieve its target. According to the text of the BR1, Japan foresees the use of units from market-based mechanisms and LULUCF to achieve its target.

23. The ERT reviewed the reported information and provided its assessment of progress made towards achieving the target. In 2011, total emissions without LULUCF were 1,306,537.60 kt CO_2 eq, and Japan reported that the contribution of units from LULUCF activities was 52,187 kt CO_2 eq (no market-based mechanism credits were used). These figures resulted in 2011 emissions being 7.1 per cent below the base year 2005 level.

24. The ERT reviewed the reported information and provided its assessment of progress made towards achieving the target. The ERT noted the progress made by Japan.

1. Mitigation actions and their effects

25. The ERT reviewed the reported information and noted that Japan provided in its BR1 and CTF table 3, information on PaMs that is different with respect to the information on PaMs included in the sixth national communication (NC6). Japan has provided in its BR1 relevant information on its package of mitigation actions introduced to achieve its target. The BR1 provided information on mitigation actions organized by sector and by gas, but did not provide an expected mitigation effect for 2020, for each mitigation action. The ERT therefore strongly encourages Japan to report expected mitigation effects for all PaMs in its next biennial report (BR). A detailed review of the reported information is provided in chapter II.B of the IDR/NC6.

26. Japan's PaMs to limit GHG emissions mainly operate under the Basic Environmental Law and other legislation, under which is enacted the Act on Promoting Global Warming Countermeasures. In May 2013, this act was amended to replace the

Kyoto Protocol target achievement plan, which had been formulated to address the first commitment period of the Kyoto Protocol, with provision for a forward-looking plan for global warming prevention. The full details of this plan are still to be determined. Until then, Japan is operating under the principle of global warming policies for the time being.

27. The energy sector accounted for 91.6 per cent of emissions in 2012. Measures to underpin action on emissions in the energy sector are comprehensive and include the following:

(a) Information systems have been developed through the accounting, reporting and disclosure programme;

(b) The cooperation of industry has been achieved through voluntary action plans (VAPs);

(c) Regulatory measures have been implemented through energy efficiency standards;

(d) Economic instruments have been utilized through:

(i) A tax for climate change mitigation, which is an extra tax on fossil fuel consumption proportional to CO_2 emissions from (fossil fuel) combustion;

(ii) A carbon tax applied on fossil fuel consumption;

(iii) Tax expenditures to encourage demand for new passenger vehicles with high energy efficiency performance;

(iv) Development of a domestic carbon offset scheme called the J-credit scheme;

(v) Use of credits obtained from offset projects in developing countries implemented under the joint crediting mechanism (a new mechanism being advanced by the Japanese Government referred to as JCM, see para. 32 below);

(e) Investment by the Government in infrastructure, research and demonstration projects to assist commercialization of new technologies is significant.

28. Japan implemented its accounting, reporting and disclosure programme as of 2008, under which businesses must report emissions if their emissions exceed certain thresholds. These thresholds are 1,500 kilolitres of crude oil equivalent for energy consumption or 3 kt CO_2 eq for non-CO_2 gases. Information is publicly disclosed, subject to certain restrictions.

29. VAPs in the industrial sector play by far the largest role in Japan's mitigation efforts across industry. These VAPs are drawn up on an industry association basis (e.g. the Chemical Industry Association and the Iron and Steel Federation), and include a target compared to a base year level. The target is to be met through a combination of domestic actions by the association and international units.

30. Industries with a VAP can choose to express the target in terms of CO_2 intensity, CO_2 emissions, energy intensity or energy consumption. In total, 90 industries have established VAPs for the period to 2020, including 34 industries participating in the Japanese business association (Keidanren). The VAPs cover around 50 per cent of Japan's total emissions and around 80 per cent of emissions from the industrial and energy conversion sectors. In the period to 2012, targets under VAPs were met by 84 of the 114 industries that formulated action plans.

31. The J-credit scheme is a cross-cutting measure that works as a carbon offset scheme. Eligible activities include renewables, energy efficiency enhancements and forest sequestration. Approximately 1,736 kt CO_2 eq of emission reductions is expected to be achieved from projects currently registered. The principal benefit for companies of

participation is to be able to report these offsets in their annual report under the accounting, reporting and disclosure programme or as contributions towards VAP commitments.

32. JCM is designed to facilitate the diffusion of leading low-carbon technologies, products, systems, services and infrastructure in developing countries. Upon signature of a bilateral agreement between a developed country and a developing country, JCM enables Japanese and other developed country businesses to invest in offset projects in developing countries for which credits are granted for avoided GHG emissions and GHG emission reductions. The rules for such credits are agreed by a joint committee that consists of representatives from both Governments, which are part of the bilateral agreement. REDD-plus[1] projects for the sustainable management of forests in developing countries are being considered for implementation under the JCM. The use of credits from the JCM for Japan's domestic regulatory purposes is under consideration.

33. Many PaMs are also implemented at the local level, for example, through 1,789 local government action plans. Table 2 provides a concise summary of the key mitigation actions implemented by Japan to achieve its target.

Table 2
Summary of information on mitigation actions reported by Japan

Sectors affected	*List of key policies and measures*	*Estimate of mitigation impact (kt CO2 eq)*
Policy framework and cross-sectoral measures		
	Act on the Promotion of Global Warming Countermeasures	NE
	Accounting, reporting and disclosure programme	NE
	Voluntary action plans	NE
	Tax for climate change mitigation	5 888–23 804
	J-credit scheme	NE
	Joint crediting mechanism	NE
	Green finance	NE
Energy		
Energy supply	Best available technology standards	NE
	Offsets for coal-fired power stations	NE
	Infrastructure investment	NE
	Demonstration projects for coal gasification, carbon capture and storage, tidal and deep sea wind farms	NE
Renewable energy	Feed-in tariff scheme	NE
Energy efficiency	Energy Conservation Act 1979	NE
	Voluntary action plans	NE
	Top Runner programme	NE

[1] In decision 1/CP.16, paragraph 70, the Conference of the Parties encouraged developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

Sector affected	Name of key policies and measures	Estimate of mitigation impact (kt CO2 eq)
Residential and commercial sectors	Building efficiency standards	NE
	Local government action plans	NE
Transport	Top Runner programme	NE
	Automobile acquisition tax expenditures	NE
	Voluntary action plans	NE
Industrial sectors	Voluntary action plans	NE
	Fluorocarbon Recovery and Destruction Act 2013	9 700
Agriculture	Reducing fertilizer use	803
	Improving energy efficiency of agricultural equipment	599
	Sustainable agricultural production practices	NE
Forestry	Forest management	38 000
	Revegetation	1000
Waste management	Waste Management Act	600

Note: The estimates of avoided greenhouse gas emissions given for some measures are emissions in carbon dioxide or carbon dioxide equivalent for 2020.

Abbreviations: NE = not estimated.

34. In its BR1, Japan reported that there were no significant changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements, used for domestic compliance monitoring, reporting, archiving of information and evaluation of the progress towards its target.

35. Japan has not provided in its BR1 information on the assessment of the economic and social consequences of response measures.

2. Estimates of emission reductions and removals and the use of units from the market-based mechanisms and land use, land-use change and forestry

36. Japan reported in its BR1 and CTF table 4 on its use of units from LULUCF activities and market-based mechanisms to achieve progress towards its target. For 2010 and 2011, Japan reported annual total emissions excluding LULUCF that are below the 2005 base year level. Japan reported on its use of units from LULUCF activities under activity-based accounting. Because of the choice of activity-based accounting, LULUCF reductions in 2005 were not applicable. For 2010 and 2011, Japan reported units equivalent to −49,802.91 kt CO_2 eq and −52,187.72 kt CO_2 eq, respectively, offsetting roughly 4 per cent of total emissions in both years.

37. Japan reported in CTF table 4 that it did not use units from market-based mechanisms for the years 2010–2012 towards the achievement of its 2020 target, but it mentioned during the review that it intends to use credits from JCM (see para. 32). Japan also mentioned that it has not decided yet on its plans to make use of units from market-based mechanisms under the Convention, potentially including all types of units covered (assigned amount units, certified emission reductions, emission reduction units and other units under the Convention). Table 3 illustrates how Japan reported on the use of units from LULUCF activities and market-based mechanisms to achieve progress towards its target.

Table 1

Summary information on the use of units from market-based mechanisms and land use, land-use change and forestry as part of the reporting on the progress made towards achievement of the target by Japan

Year	Emissions excluding LULUCF (kt CO_2 eq)	LULUCF emissions (kt CO_2 eq)	Emissions including LULUCF (kt CO_2 eq)	Use of units from market-based mechanisms (kt CO_2 eq)
Base year (2005)	1 354 406.69	NA	NA	NA
2010	1 257 380.64	−47 802.90	1 209 577.73	0.00
2011	1 307 728.35	−52 187.72	1 255 540.63	0.00

Abbreviations: LULUCF = land use, land-use change and forestry, NA = not applicable.

3. Projections

38. Japan has provided in its BRT and CTF tables 5 and 6 information on its updated projections for 2020. Projections include a 'with measures' scenario until 2020, presented relative to actual inventory data for 1990–2011 at five-year intervals. Projections are presented on a sectoral basis for energy-related CO_2 emissions only. Projections of total GHG emissions were provided on a gas-by-gas basis for all the following GHGs: CO_2, CH_4, N_2O, perfluorocarbons (PFCs), HFCs and sulphur hexafluoride (SF_6) (treating PFCs and HFCs collectively in each case). Projections are also provided as a national total, using GWP values. However, the ERT noted that the following required elements were not reported:

(a) GHG emission projections in an aggregated format for each sector using GWP values (non-CO_2 emissions in the energy sector and GHG emissions aggregated for other sectors were missing);

(b) Net emission projections of CO_2, CH_4 and N_2O (including LULUCF);

(c) GHG emission projections related to fuel sold to ships and aircraft engaged in international transport;

(d) GHG emission projections for 2040;

(e) Relevant information on factors and activities for each sector to provide an understanding of emission trends in the years 1990 to 2020;

(f) An estimate of the total effect of PaMs, in accordance with the 'with measures' definition, compared to a situation without such PaMs, in terms of GHG emissions avoided or sequestered, by gas.

39. The ERT therefore recommends that Japan include all the missing elements listed in paragraph 38 above in its next BR.

40. In its BRT, Japan did not provide explicit information on the changes since the previous national communication in the methodologies used for the preparation of projections. The ERT accordingly encourages Japan to report such information in its next BR. Further discussion of the reported information is provided in chapter II.C of the IDR/NC 6.

41. Based on the methodology descriptions in the NC 6 and NC 5, the methodology has changed significantly. The NC 5 methodology used some complex econometric models. The NC 6 projections have been estimated based on indicative activity factor estimates (including population, households, GDP and energy use) and emission factor estimates. For

energy-related CO_2, the emission factor is based on the 2012 energy mix (because the future energy mix is not available). For other sectors, Japan provided a general description that the choice of emission factor is based on the strength of policies in the sector, but details of individual source or sector methodologies (for non-energy sectors) were not provided.

42. Total GHG emissions excluding LULUCF in the "with measures" scenario are projected, in 2020, to be at a level that is 0.9 per cent above the 2005 base year level. Considering the reported information on the expected level of contribution from LULUCF removals in 2020 of 38,000 kt CO_2 eq, projected GHG emissions including these removals are expected to be 1.9 per cent below the 2005 base year level by 2020, while the target is 3.8 per cent below the 2005 base year level. Japan plans to make up this difference with additional policies not yet included in the projections (e.g. renewable energy and refrigerant management policies) and units from market-based mechanisms. The projected level of GHG emissions excluding LULUCF in 2020 is expected to be 10.5 per cent above the 1990 level.

43. Energy-related CO_2 emissions (which make up more than 90 per cent of emissions) are projected to increase by 0.4 per cent between 2005 and 2020, resulting from increases in emission intensity of energy (CO_2 emissions per unit of energy) due to the substitution of nuclear energy production by fossil fuel energy production that are not compensated by sufficient decreases in energy use. Non-energy-related CO_2, CH_4 and N_2O emissions are expected to decline by 12.5 per cent, 21.7 per cent and 8.3 per cent, respectively, over this period. Drivers for trends in emissions of these gases were not discussed. F-gas emissions are expected to increase by 109.1 per cent. The projected increase in F-gas emissions is based on increasing use of HFCs as substitutes for ozone-depleting substances, such as in air conditioning and refrigeration. However, expected reductions resulting from the recent enactment of the Act on Rational Use and Proper Management of Fluorocarbons have not yet been incorporated into the projections.

44. Emission projections for energy-related CO_2 emissions were presented by sector for the following sectors: industrial, commercial, residential and transport. For these sectors, expected changes in energy use were provided. The sharpest decrease is expected in energy used for transportation, a 25.8 per cent decrease between 2005 and 2020, followed by a 17.9 per cent decrease in energy use in the residential sector. Declines in energy use for the industrial and commercial sectors are projected to be more modest, at 1.1 per cent and 6.5 per cent, respectively, from their 2005 levels. Regarding CO_2 removals from forest carbon sinks, Japan expects that its usage of LULUCF for the purpose of its target will be the agreed upper limit established in the framework of the second commitment period of the Kyoto Protocol of 3.5 per cent of the 1990 level (the level of removals in 2020 will correspond to 2.8 per cent of the 2005 level). The BR1 describes the projected area, stock and timber supply of forest declared in the basic plan for forest and forestry, but it does not provide projections of net emissions including LULUCF.

45. Overall, Japan has described a plausible pathway for how it plans to meet its 2020 target. The pathway consists of:

(a) Total emissions without LULUCF are projected to be 1 per cent above the 2005 base year level;

(b) The contribution of removals from forest management in LULUCF is projected to represent 2.8 per cent of the 2005 base year level (approximately 38,000 kt CO_2 eq);

(c) Additional reductions due to a combination of policies not included in the current projections (e.g. a new refrigerant management law, and promotion of renewable

energy that were not explicitly needed for use of credits from JCM (see para. 125) and potentially gains from market-based mechanisms under the Convention.

(fn) The total of these 9Gts generally results in an emission level of 3.8 per cent below the 2005 base year level, which meets the target.

D. Provision of financial, technological and capacity-building support to developing country Parties

1. Provision of financial support to developing country Parties

46. In its BR1 and CTF tables 7, Japan reported information on the provision of financial support required under the Convention for the years 2011 and 2012.

47. Japan has indicated in the notes to CTF tables 7 on financial support brief information on "new and additional" financial resources it has provided pursuant to Article 4, paragraph 3, of the Convention and clarified how it has determined such resources as being "new and additional". However, this information was not provided in the descriptive textual part of the BR1. To enhance the transparency of its reporting, the ERT recommends that Japan also report this information in the textual part of its next BR. Japan clarified in the footnote to CTF table 7 that it considers climate finance as "new and additional" if it is newly committed or disbursed finance from the previous year and if it contributes to climate change measures in developing countries. Every year, Japan seeks new funding from the Diet, and as such, Japan considers that the reported "new and additional" climate finance is newly committed or disbursed during a given period such that previously committed or disbursed climate finance is not reported twice.

48. Japan has reported how it seeks to ensure that the resources it provides effectively address the needs of Parties not included in Annex I to the Convention (non-Annex I Parties) with regard to climate change adaptation and mitigation with its fast-start finance contributions through its embassies and the Japanese International Cooperation Agency (JICA) offices in developing countries. Japan reported that as of December 2012, 952 projects in 114 developing countries had been implemented. These projects were undertaken after close consultation with the governments of developing countries and international organizations in response to the needs of recipient countries, as well as taking into account local economic situations and the contents of the projects.

49. Japan reported that its fast-start finance assistance to non-Annex I Parties is provided especially to those making efforts to reduce GHG emissions, as well as to those that are vulnerable to the negative impacts of climate change. Financial assistance is provided as official development assistance (ODA) through bilateral contributions, principally in the form of concessional loans but also as grants and technical assistance, as well as through contributions to multilateral funds such as United Nations organizations and international development organizations. The ODA contributions are administered by relevant ministries, JICA and other institutions. Other official flows provide co-financing (investments, export credits and loans to international organizations) by the Japan Bank of International Cooperation (JBIC), and private financing to supplement public financing.

According to the 1947 Constitution, the Japanese Administration is composed of the legislative, executive and judiciary powers. The Parliament, or Legislature, is called the Diet and is composed of the House of Representatives (480 members) and the House of Councillors (242 members). The members of the Diet are elected by the Japanese people. The executive power is carried by the Cabinet, headed by the Prime Minister, supported by the ministers who are appointed by the Prime Minister and who are usually members of the Diet. The Prime Minister is elected by the Diet. The highest judiciary power in Japan is the Supreme Court. Other courts are district courts, high courts, family courts and summary courts. Judges are appointed by the Cabinet.

50. From January 2010 to December 2012, of its total USD 15 billion fast-start finance announced in 2009, Japan has implemented projects or programmes worth a total assistance of USD 13.5 billion of public finance to developing countries to address climate change. The mitigation programme (USD 9.99 billion) focuses on the promotion of renewable energy, particularly solar, wind and geothermal energy, as well as on increasing energy efficiency; adaptation projects (USD 1.37 billion) focus on increasing resilience, water supply and floods, agriculture and early-warning systems; cross-cutting mitigation and adaptation projects (USD 2.10 billion) including a mix of adaptation, mitigation, capacity-building and technology transfer. Japan also provided a significant amount of resources to the REDD-plus programme (USD 723 million) to conduct surveys on forest resources and to develop plans to manage forests and facilitate forestation.

51. Japan reported information on the importance of the role of the private sector in Japan's contribution to meeting its commitments on financial assistance and on how it promotes the scaling up of private investment in mitigation and adaptation activities. Participation of the private sector is incentivized by the initial injection of public financial assistance. For example, the private sector in Japan participates through co-financing together with JBIC and by the provision of trade insurance by Nippon Export and Investment Insurance. As a result of these efforts, Japan estimates that its private sector contribution reached over USD 3 billion as of the end of 2012 (this contribution is not counted as part of its fast-start contributions).

52. Japan reported on its climate-specific public financial support by allocation channels for 2011 and 2012, totalling USD 8,235.13 million (USD 4,141.23 million in 2011 and USD 4,093.90 million in 2012). For the reporting period, about 92.1 per cent of the assistance reported was delivered through bilateral, regional and other channels, while 7.9 per cent was through multilateral funds. Of the total funds reported for the period, about 73.4 per cent went to mitigation, 10.8 per cent to adaptation, 15.7 per cent to cross-cutting (mitigation and adaptation) activities and 0.1 per cent to other climate change related activities.

53. Japan provided financial support for climate change to a large number of non-Annex I Parties, mainly countries in Asia, followed by countries in Africa, small island developing states (SIDS) and least developed countries (LDCs). Most of Japan's fast-start finance consists of concessional loans, grants and technical assistance from the Government and is mainly directed towards mitigation, followed by adaptation.

54. Japan has provided information on its contributions to the Global Environment Facility (GEF) in accordance with its commitments to the fifth replenishment period (GEF-5). Japan is the second largest contributor to GEF-5 and committed to providing USD 210.34 million over the period 2011–2012, of which USD 96.0 million was for climate-specific projects. The ERT acknowledged with appreciation that Japan is one of the largest contributors to climate finance using a wide variety of channels including the private sector. The ERT noted that these commitments were made and kept, even though Japan has faced severe difficulties since the 2011 GEJE. During the review, Japan indicated that the Government did not contribute public funding to the Adaptation Fund but that it rather contributed via the private sector based on the share of proceeds from the clean development mechanism.

55. The UNFCCC established specialized channels for assisting LDCs such as the Least Developed Countries Fund. During the review, Japan provided information on funds directed to particularly vulnerable countries such as LDCs, SIDS and countries in Africa. The funds were provided mostly through bilateral and multilateral (including the GEF) channels from fast-start finance and totalled about USD 2.1 billion. Japan indicated that most of these funds were programmed mainly for adaptation, but also for some projects related to mitigation and cross-cutting issues.

56. Table 4 includes some of the information reported by Japan on its provision of financial support.

Table 4
Summary of information on provision of financial support in 2011–2012
(Millions of United States dollars)

	Years of disbursement	
Information reported on public financial support	2011	2012
Climate-specific contributions through multilateral channels, including:	323.28	328.76
Contribution to the Global Environment Facility	90.00	
Contributions to the Climate Investment Fund	222.30	222.30
Contributions to the Green Climate Fund	0.00	4.00
Contributions to the Trust Fund for Supplementary Activities	10.98	1.46
Climate-specific contributions through bilateral, regional and other channels	5 817.65	3 765.14
Fast-start finance	13 950.93	

Japan did not specify a year for its climate-specific contribution to the Global Environment Facility and, as such, the Global Environment Facility contribution is excluded from the total of climate-specific contributions via multilateral channels reported in this table.

This amount represents Japan's total contribution through fast-start finance for the period from January 2010 to December 2012.

2. Approach used to track support provided

57. Japan reported in its BR1 a brief overview of its approach for tracking support provided to non-Annex I Parties. However, Japan did not include information on indicators used to allocate and deliver its assistance. The ERT therefore recommends that Japan enhance the transparency of its reporting by providing more detailed information on its tracking of support, namely by including information on indicators used to track climate-specific assistance provided (mitigation and adaptation), as well as the delivery mechanisms used.

58. Financial support contributions for climate change activities provided by Japan are channelled through the different ministries with responsibilities in the area of climate change. Grants, loans and technical assistance are provided by: the Ministry of Foreign Affairs; Ministry of Agriculture, Forestry and Fisheries; Ministry of Economy, Trade and Industry; Ministry of the Environment; Ministry of Land, Infrastructure, Transport and Tourism; and JICA. Contributions to international development organizations and multilateral funds are administered by the implementing entities. For Japan, these are mainly the GEF, the Climate Investment Fund, the United Nations Development Programme, the United Nations Environment Programme, the World Food Programme or the International Tropical Timber Organization. Funds provided through other official channels are provided by other relevant ministries and implementing agencies. The Ministry of Foreign Affairs has overall responsibility for gathering and compiling information on all the channels distributing Japan's fast-start contributions.

3. Technology development and transfer

59. In its BR1 and CTF table 8, Japan has provided information on measures taken to promote, facilitate and finance the transfer of, access to and deployment of climate-friendly technologies for the benefit of non-Annex I Parties, and for the support of the development and enhancement of endogenous capacities and technologies of non-Annex I Parties.

60. Japan has provided in its BR1 information on its framework policy for technology development and transfer, which is the Actions for Cool Earth (ACE) initiative announced in November 2013. The ACE initiative has three pillars: innovation, diffusion and partnership, to promote the development and diffusion of Japanese and other developed country leading low-carbon technologies. Conditional on a return to budget surpluses[a] of national and local government finances by 2020, the Government of Japan, together with the private sector, will invest substantial amounts of money in technological innovation (combined amount of USD 110 billion over five years).

61. The innovation pillar will be implemented by expanding domestic investment for technological innovation for which the Government's invested amount will focus on high-risk, high-return technology development areas following a low-carbon technology plan that serves as a technology road map. This road map indicates the technology levels targeted, based on the latest scientific knowledge available; with these new technologies, Japan aims to realize about 80 per cent of the total GHG emissions required to halve global emissions by 2050. The ERT notes that international cooperation with leading economies on basic research and development is at the centre of Japan's innovation strategy.

62. To promote global diffusion of leading low-carbon technologies and achieve its global emission reduction objective, Japan's diffusion pillar will both accelerate the diffusion of new technologies and verify the mitigation effects realized by these. Upon signature of a bilateral agreement between Japan (or another developed country) and a developing country, JCM enables businesses to invest in offset projects in developing countries for which credits are granted for avoided GHG emissions and GHG emission reductions. The rules for such credits are agreed by a joint committee that consists of representatives from both Governments which are part of the bilateral agreement. REDD-plus projects for the sustainable management of forests in developing countries are currently being considered for implementation under JCM. CTF table 8 reports many such projects undertaken by Japan.

4. Capacity-building

63. In its BR1 and CTF table 9, Japan has provided information on how it has provided capacity-building support that responds to the existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation, and technology development and transfer.

64. In its BR1, Japan indicated that because many non-Annex I Parties do not have enough capacity in relation to their institutional arrangements, human resources and technologies to effectively implement climate change policies, it is involved in many projects to promote and enhance such capacities. In CTF table 9, Japan has provided descriptions of many programmes or projects implemented to: enhance the capacity of policymakers and practitioners in the Asia Pacific region by sharing knowledge on climate change adaptation; develop the capacity of researchers and others in the Asia Pacific region for building low-carbon societies; enhance the capacity on flood control measures in many parts of the world; build the capacity and strengthen institutional mechanisms to mitigate dangers of flood hazards in Caribbean States; enhance the disaster reduction capacity in the Philippines; enhance the capacity for groundwater development in Tanzania; and develop the capacity for studying measures in response to variation of precipitation patterns, promoting integrated water resource management in Indonesia.

65. The ERT commends Japan for its transparent reporting on the provision of capacity-building support.

[a] Before interest payment

III. Conclusions

66. The ERT conducted a technical review of the information reported in the BR1 and CTF tables of Japan in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the BR1 and CTF tables provide a general overview of information on emissions and removals related to the target, a description of the target, progress made by Japan to achieve its target and provision of support to developing country Parties. During the review, Japan provided additional information including details on its target (Japan's new emission reduction target, impacts of GEJE and the energy situation in Japan); GHG emissions trends in GHG emissions and factor analysis; PaMs (overall policy context, policy framework, cross-cutting PaMs and sectoral PaMs; information with respect to the effect of some PaMs on GHG emissions and a summary of the fourth strategic energy plan); and the methodology of GHG emission projections.

67. Total GHG emissions excluding emissions and removals from LULUCF increased by 8.8 per cent between 1990 and 2012, whereas total GHG emissions including net emissions or removals from LULUCF increased by 8.6 per cent over the same period. Emission increases were driven by the substitution of nuclear energy by fossil fuel energy production linked to the impact of GEJE in 2011 and economic growth. These factors outweighed improvements in the efficiency of use (e.g. in the transport sector), as well as emission reductions in the industrial processes, agriculture and waste sectors.

68. Japan's GHG emission reduction target is a 3.8 per cent emission reduction by 2020 compared to the 2005 base year level of 1,351,406.69 kt CO_2 eq. The included gases are CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using GWP values from the AR2 of the IPCC and NF$_3$ using GWP values from the AR4 of the IPCC to aggregate GHG emissions up to 2020. All six sectors are included (energy, transport, industrial processes, agriculture, LULUCF and waste), and activity-based accounting is used for LULUCF in meeting the target. Japan expects that in 2020, the level of removals from forest management will be about 2.8 per cent or more of the base year (2005) emission level (approximately 38,000 kt CO_2 eq). In 2011, total emissions without LULUCF were 1,306,537.60 kt CO_2 eq, and contributions of units from LULUCF activities were 52,187 kt CO_2 eq (no units from market-based mechanism were used). These figures result in 2011 emissions being 7.1 per cent below the base year 2005 level.

69. In the BR1, Japan presented GHG emission projections for 2020 for the 'with measures' scenario. Total GHG emissions excluding LULUCF in the 'with measures' scenario are projected in 2020 to be at a level that is 0.9 per cent above the 2005 base year level, or 10.5 per cent above the 1990 level. Considering the reported information on the expected level of contribution of removals from forest management in LULUCF in 2020 of 38,000 kt CO_2 eq, projected GHG emissions including these removals are expected to be 1.9 per cent below the 2005 base year level by 2020, while the target is 3.8 per cent below the 2005 base year level. Japan plans to make up this difference with additional policies not yet included in the projections (e.g. renewable energy and refrigerant management policies), credits from JCM and potentially units from existing market-based mechanisms under the Convention. Overall, Japan has described a plausible pathway to meet this target owing to a range of PaMs, contributions of units from LULUCF activities and use of units from market-based mechanisms.

70. Japan's PaMs to limit GHG emissions currently operate under the Basic Environmental Law, under which is enacted the Act on Promoting Global Warming Countermeasures. In May 2013, this act was amended to replace the Kyoto Protocol target achievement plan, which had been formulated to address the first commitment period of the Kyoto Protocol, with provision for a forward-looking plan for global warming prevention.

The full details of this plan are still to be determined. Until then, Japan is operating under the principle of global warming policies for the time being.

71. GEJE had a major impact not only on Japan's GHG emissions due to the substitution of nuclear power plants by fossil fuel power plants, but also on Japan's new emission target for 2020 of 3.8 per cent below the emission level of 2005. As key measures to meet that target will be revised taking into account the contribution of nuclear power, Japan identified: a 20 per cent improvement in energy intensity; improvement of the emission factor of electricity by introducing renewable energy; amendment of the law on fluorocarbons to deliver emission reductions and implementation of JCM; and enhancement of the carbon sink of forests. Additional measures such as a new refrigerant law and promotion of renewable energy were not modelled in the current projections, and nor was the use of market-based mechanisms.

72. Japan provided financial support for climate change to a large number of non-Annex I Parties, mainly countries in Asia, followed by countries in Africa, Latin America and the Caribbean. Most of Japan's fast-start finance consists of loans from the Government and is mainly directed towards mitigation, followed by adaptation.

73. Japan reported on its climate-specific public financial support by allocation channels for 2011 and 2012, totalling USD 8,235.13 million (USD 4,141.23 million in 2011 and USD 4,093.90 in 2012). For the reporting period, about 92.1 per cent of the assistance reported was delivered through bilateral, regional and other channels, while 7.9 per cent was delivered through multilateral funds. Of the total funds reported for the period, about 73.4 per cent went to mitigation, 10.8 per cent to adaptation, 15.7 per cent to cross-cutting (mitigation and adaptation) activities and 0.1 per cent to other climate change related activities.

74. From January 2010 to December 2012, of its total USD 15 billion fast-start finance announced in 2009, Japan has implemented projects or programmes worth a total assistance of USD 13.5 billion of public finance to developing countries to address climate change. Japan has also provided information on its contributions to the GEF in accordance with its commitments to GEF 5. Japan is the second largest contributor to GEF 5 and committed to providing USD 210.34 million over the period 2011–2012, of which USD 96.0 million was for climate-specific projects.

75. In the course of the review, the ERT formulated several recommendations relating to the completeness and transparency of Japan's reporting under the Convention. The key recommendations[7] are that Japan:

(a) Improve the completeness of reporting by including in the next BR the following information:

(i) GHG emission projections in an aggregated format for each sector, using GWP values (see para. 39 above);

(ii) Net emission projections of CO_2, CH_4 and N_2O including LULUCF (see para. 39 above);

(iii) Projections of emissions from international aviation and maritime transport reported separately from the total (see para. 39 above);

(iv) GHG emission projections for 2030 (see para. 39 above);

(v) Relevant details on factors and activities for each sector to provide an understanding of emission trends in the years 1990 to 2020 (see para. 39 above);

[7] The recommendations are given in full in the relevant sections of this report.

(vi) Total effect of mitigation actions, in accordance with the 'with measures' definition, compared to a situation without such mitigation actions, in terms of GHG emissions avoided or sequestered, by gas (see para. 39 above);

(b) Improve the transparency of reporting by including in the next BR the following information:

(i) What "new and additional" financial resources it has provided pursuant to Article 4, paragraph 3, of the Convention and clarified how it has determined such resources as being "new and additional" in the textual part of the BR in addition to the information provided in CTF table 7 (see para. 47 above);

(ii) More details on its tracking of support, namely by including information on indicators used to track climate-specific assistance provided (mitigation and adaptation), as well as the delivery mechanisms used (see para. 57 above).

Annex

Documents and information used during the review

A. Reference documents

"UNFCCC biennial reporting guidelines for developed country Parties". Annex to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=4>.

"Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Decision 23/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=20>.

FCCC/ARR/2013/JPN. Report of the individual review of the annual submission of Japan submitted in 2013. Available at <http://unfccc.int/resource/docs/2014/arr/jpn.pdf>.

FCCC/IDR.5/JPN. Report of the in-depth review of the fifth national communication of Japan. Available at <http://unfccc.int/resource/docs/2011/idr/jpn05.pdf>.

FCCC/SBI/2014/INF.20. Compilation and synthesis of sixth national communications and first biennial reports from Parties included in Annex I to the Convention. Executive summary. Note by the secretariat. Available at <http://unfccc.int/resource/docs/2014/sbi/eng/inf20.pdf>.

FCCC/SBI/2014/INF.20/Add.1. Compilation and synthesis of sixth national communications and first biennial reports from Parties included in Annex I to the Convention. Note by the secretariat. Addendum. Policies and measures; past and projected greenhouse gas emission trends; quantified economy-wide emission reduction target and progress towards the target; and provision of financial, technological and capacity-building support to developing country Parties. Available at <http://unfccc.int/resource/docs/2014/sbi/eng/inf20a01.pdf>.

FCCC/SBI/2014/INF.20/Add.2. Compilation and synthesis of sixth national communications and first biennial reports from Parties included in Annex I to the Convention. Note by the secretariat. Addendum. Vulnerability, impacts and adaptation; research and systematic observation; and education, training and public awareness. Available at <http://unfccc.int/resource/docs/2014/sbi/eng/inf20a02.pdf>.

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2013 GHG inventory submission of Japan. Available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php.

2014 GHG inventory submission of Japan. Available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php.

B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Yu Kamei (Ministry of the Environment), including additional material on national circumstances, the national registry, recent climate policy developments in Japan and greenhouse gas emission projections.